

Application No.: 10/664,644

Docket No.: JCLA9862

REMARKS**Present Status of the Application**

The Office Action rejected claims 1-20 under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent 5,734,241; hereinafter Okada). Claims 1-20 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Office Action Rejections

The Office Action rejected claims 1-20 under 35 U.S.C. 103(a) as being unpatentable over Okada. Applicants respectfully traverse the rejections for at least the reasons set forth below.

The present invention is directed to a method and device for stopping the spindle motor of an optical disc system without referring to a frequency signal under a CLV mode.

As for example shown in FIG. 2, the present invention is operated in three periods.

The reversing torque is generated in a first period (t_0 - t_1). The reversing torque is decreased in a second period (t_1 - t_2) and therefore the speed of the spindle motor gradually reduces in the second period. Finally, the speed of the spindle motor becomes zero in a third period (t_2 - t_3), as a locking torque which is substantially lower than the torque required to actuate the spindle motor, is generated.

The features are recited in claims 1, 8 and 15. For example, independent claim 1 recited the features in the following:

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1. A method for stopping the spindle motor of an optical disc system, comprising:
deriving a reversing torque in the spindle motor during a first period;
decreasing the reversing torque during a second period; and
deriving a locking torque in the spindle motor during a third period, wherein the locking torque is substantially at a level smaller than that for actuating the spindle motor and the spindle motor remains stationary after the third period terminates. (emphasis added).

Claims 8 and 15 also recite the similar features.

In re Okada, Okada does not teach the three-stage operation as recited in claimed invention. Okada (col. 12, liens 45-67) teaches that the reverse torque is generated by a first brake current at a first current level, to thereby perform the brake operation at a full torque.

Then, Okada teaches that when the rotating speed reaches the absolute number of revolutions, the monostable multivibrator 307 generates a low level signal. In response to the low level signal, the current control circuit 308 switches from the first brake current to the second brake current of a second current level smaller than the first current level. As a result, the brake operation is performed by a small reverse rotation torque by using the second brake current. The second brake current is gradually decreased, to thereby smoothly stop the rotation.

Therefore, the cited reference by Okada differs from the present invention as Okada does not disclose that the reverse torque decreases in the second period, and a locking torque in a third period is derived to reach the stationary state.

In other words, Okada only discloses the two-stage operation by the first braking current level and the second braking current level until stop.

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For at least the foregoing reasons, Applicant respectfully submits that independent claims 1, 8 and 15 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-7, 9-14, and 16-20 patently define over the prior art as well.

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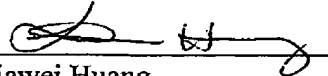
CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1-20 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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